

**IMPROVING ACCESS  
TO  
GOVERNMENT WEB SITES  
FOR  
PEOPLE WITH DISABILITIES**

***"The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect."  
- Tim Berners-Lee (W3C Director)***

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## **EXECUTIVE SUMMARY**

The Web has created many opportunities for people with disabilities, enabling them to participate independently in education, employment, entertainment, shopping and banking. However, when websites are designed without this population in mind, then these opportunities vanish and people with disabilities are once again prevented from fully participating in society.

The Web can present barriers to people with different kinds of disabilities:

- For individuals with visual disabilities, unlabeled graphics, un-narrated video and poorly marked-up tables or frames cause difficulty, particularly for those use screen readers.
- For individuals with hearing disabilities, barriers include lack of captioning for audio.
- For individuals with physical disabilities, small hyperlink areas and a lack of support for keyboard commands can cause extreme frustration.
- And, for individuals with cognitive or neurological disabilities, barriers include a lack of consistent navigation structure, overly complex presentation or language, lack of illustrative non-text materials and flickering or strobing designs on pages.

All these barriers can be removed with proper design and correct coding of web pages. As accessibility and usability are closely intertwined, designing with accessibility in mind benefits everyone.

Numerous jurisdictions have taken a leadership role by adopting standards or policies relating to web accessibility. They realize the importance of reaching all members; the economic benefits of accessibility solutions; the legal requirements from a perspective of human rights and public responsibility.

An extensive evaluation was conducted on a representative sample of BC Government web pages. Those pages that follow the **B.C. Government Internet Standards** had a slightly higher level of accessibility than those pages that were non-compliant. However, there is room to improve accessibility on all pages so that all British Columbians have access to the information on Government web page, regardless of the technologies they use.

The 'Options for Action' of this report has been informed by the World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI). Considered international leaders in this area – the W3C is widely respected for developing trusted guidelines regarding Internet accessibility. It is our recommendation that the B.C. Government revise the **B.C. Government Internet Standards** so that they are aligned with the W3C's Web Content Accessibility Guidelines.

## **INTRODUCTION – "Why Web Accessibility?"**

People with disabilities (PWDs) rely on the Web for the same things as others do – education, employment, entertainment, shopping and banking. In fact, it could be argued that individuals with disabilities rely upon the Web more than others because of circumstances related to the disability. The Web has opened many doors for people with disabilities but bad design can slam the door shut again!

PWDs can use a range of assistive technology with their computers to help them access information. However, when websites are not designed and coded correctly, assistive technology does not perform effectively. These are some of the obstacles PWDs face:

- People with visual impairments and some types of learning disabilities often rely on text-to-speech screen readers that read aloud text appearing on the screen. These screen readers cannot read images, graphs, maps, etc, so when information is provided only in these formats it is not accessible to people utilizing screen reader technology.
- Blinking and scrolling text can also cause problems for screen readers and flickering or flashing designs can cause seizures in people with certain neurological disorders.
- Without captioning, people with hearing impairments cannot appreciate multimedia content such as on-line newscasts, movies, and lectures.
- Without descriptive narration, people who are blind miss information portrayed visually.
- For individuals with little or no hand control, using a mouse can be very difficult. Being required to 'click on' a tiny area to access information can be an obstacle.
- Individuals with cognitive impairments find inconsistent page layout disorienting and confusing.

Good design is good design. As sidewalk curbcuts, which are intended for people using wheelchairs, also benefit parents wheeling strollers and individuals on roller blades, accessible web design benefits more than people with disabilities:

- alternate formats benefit both individuals with visual impairments and those who turn off images while using the Web due to low bandwidth;
- captioning benefits people with hearing impairments, it also benefits those in noisy environments and people who – perhaps because their first language is not English – have difficulty understanding when English is spoken quickly.

- captioned text is also searchable
- good colour contrast aids people with colour blindness, as well as those using monochrome monitors and those who prefer read from printed pages; and
- keyboard commands assist people with limited hand function, as well as those working in confined spaces with no room to operate mice (ie. on planes, trains and automobiles).

The list goes on. Obviously, accessibility and usability are intertwined, and are equally important.

As the BC Government puts more services and information on to Web, it may be excluding segments of the population by not adhering to web accessibility principles. British Columbians with disabilities may have legitimate complaints under the B.C. Human Rights Code if they are excluded from receiving equitable service compared with other British Columbians.

Accessible web design levels the playing field for people with disabilities, enabling them to access information and to fully participate in society.

## WHAT IS ASSISTIVE TECHNOLOGY?

Typically, using a computer means being able to type on a keyboard, see and read the screen, control and hear auditory signals. However, not everyone is able to perform these tasks for various reasons. People with limited hand function and control, visual impairments and blindness, hearing impairments and deafness, and learning disabilities, all require accommodation to access information of the Internet.

Assistive (or adaptive) technology is specialized computer hardware and software applications that enable these individuals to use a computer. Understanding what technologies are being used by PWDs helps web designers make decisions when developing their sites that will enhance accessibility. Broad categories of assistive technology are briefly described here:

### Screen Reader

<b>Disability used for</b>	Visual impairment or learning disability
<b>How it works</b>	Interprets what is displayed on screen and directs it to either speech synthesis for audio output or refreshable Braille for tactile output
<b>Strengths</b>	Enables PWDs to use computers independently
<b>Weaknesses</b>	Older screen readers use the rendered version of a document, so the document order or structure may be lost (ie. when tables are used for layout) and their output may be confusing. Cannot interpret images or graphs. The synthesized speech is not always clear and often mispronounces words.
<b>Cost</b>	ie. JAWS for Windows \$1,300; JAWS for NT \$1,900

### Refreshable Braille Displays

<b>Disability used for</b>	Blindness
<b>How it works</b>	Pins raise and lower to display Braille, a tactile system using raised dots to represent letters and numbers
<b>Strengths</b>	Enables PWDs to use computers independently
<b>Weaknesses</b>	Users must be proficient at Braille. Cannot interpret images or graphs.
<b>Cost</b>	ie. PowerBraille \$7,000 - \$17,000

### **Screen Magnifiers**

<b>Disability used for</b>	Individuals with low vision
<b>How it works</b>	Software that magnifies a portion of the screen for easier viewing
<b>Strengths</b>	Users control features (ie. text & background colours) to enhance readability
<b>Weaknesses</b>	Reduces the area of the document being viewed, removing surrounding context. Can be confusing and disorienting. May distort text depending on magnification.
<b>Cost</b>	ie. ZoomText \$500 - \$1,300

### **Voice Recognition Applications**

<b>Disability used for</b>	People with limited or no hand function, or with learning disabilities
<b>How it works</b>	Enables user to input using voice for data entry and limited software commands
<b>Strengths</b>	Price of software applications is decreasing. Recognition rates are improving.
<b>Weaknesses</b>	Applications must have full keyboard support. Can be cumbersome when using the Web. Requires intensive training and practice. Requires high-speed systems with substantive memory (RAM).
<b>Cost</b>	ie. Dragon products \$100 - \$1,000

### **Scanning Software**

<b>Disability used for</b>	Some physical or cognitive disabilities
<b>How it works</b>	Highlights selection choices (ie. letters, to menu items, links, phrases) one at a time. User selects desired item by hitting a switch when the desired item is highlighted or announced.
<b>Strengths</b>	Can be used with minimum mobility and with a variety of switches
<b>Weaknesses</b>	Can be extremely time consuming. Intended for limited functions like data entry.
<b>Cost</b>	EZ Keys \$1,000 - \$3,500

## **WHAT OTHER ARE JURISDICTIONS DOING?**

Realizing that accessible web design benefits everyone, numerous jurisdictions have taken a leadership role by adopting standards or policies relating to web accessibility. These governments realize the importance of reaching all members; the economic benefits of accessibility solutions; the legal requirements from a perspective of human rights and public responsibility.

### **Government of Canada**

Under its Common Look and Feel policy, the Government of Canada has adopted the W3C Web Accessibility Guidelines Priority 1 and Priority 2 checkpoints "to ensure sites can be easily accessed by the widest possible audience." It has also created the Web Site Accessibility Testing Service (WATS), which provides web developers with an evaluation of their sites ([http://www.cio-dpi.gc.ca/clf-upe/1/1\\_e.asp](http://www.cio-dpi.gc.ca/clf-upe/1/1_e.asp)).

The Equity and Diversity Directorate of the Public Service Commission was the first government of any country to create a series of Web accessibility guidelines used to evaluate Web pages ([http://www.psc-cfp.gc.ca/eeppm-pmpee/program\\_overview/eeerc\\_2\\_e.htm](http://www.psc-cfp.gc.ca/eeppm-pmpee/program_overview/eeerc_2_e.htm)).

### **National Library of Canada**

June 2000, the National Library of Canada announced the formation of a task force to address the need for inclusive public policy in providing access to information to Canadians with disabilities (<http://www.nlc-bnc.ca/accessinfo/>).

### **Government of New Brunswick**

The Government of New Brunswick is currently planning a thorough review and revamp of its site.

### **United States of America**

In addition to the American with Disabilities Act, which makes accessibility to people with disabilities legally mandatory, the recently released Section 508 of the Rehabilitation Act requires federal agencies and to ensure that government Information Technology systems and electronic information meet accessibility standards.

### **Australia**

Australia's Commonwealth departments and agencies are obliged by the Disability Discrimination Act 1992 to ensure that online information and services are accessible by people with disabilities. The New South Wales Attorney General's Department's Guidelines for Web Accessibility comprises the set of guidelines and standards applicable to government agencies.



## **EVALUATION**

There is no consensus among technology/design 'experts' nor the disabled community on what constitutes 'accessibility'. As technology evolves, so do standards for accessibility. Therefore, any work done to enhance web accessibility must be reviewed and evaluated on a regular basis to ensure it keeps pace with the needs of the community.

While there is no universally accepted standard for what makes a website accessible, the World Wide Web Consortium's (W3C) Web Accessibility Initiative's (WAI's) are generally considered to be the most thorough and comprehensive. The evaluation in this report was based primarily on the WAI's Web Content Accessibility Guidelines 1.0, May 1999 Version.

In general, the BC Government Internet Standards – including the required use of Web page templates (the common 'look & feel' used across government) – have resulted in a government web site that promotes ease of use and limited accessibility. However, there is still room for improvement – particularly as it relates to users with disabilities.

A review and evaluation of selected Government of BC web pages (see Appendix A) has revealed some practices that present barriers to people with disabilities. Those sites that complied with the BC Government Internet Standards generally were more accessible. Here is a summary of the most prominent barriers:

1. Web pages exist where there is little or no equivalent information for non-text content. (ex., TV ads presented with no captioning)
2. Instances where a single textlink was used repeatedly on the same page – pointed to different URLs. (i.e., the same title or phrase is used to link to different pages or items).
3. Images (icons or pictures) are used without any text description.
4. No general site map (a type of 'table of contents' for a website) was provided to assist users in finding what they are looking for. (For an example of a sitemap, see Federal site map at [http://canada.gc.ca/search/sitemap\\_e.html](http://canada.gc.ca/search/sitemap_e.html))
5. ABBR and ACRONYM elements (i.e., special coding that enables assistive technologies to interpret abbreviations and acronyms) were seldom used.
6. Documents were not universally marked up with the proper structural elements, a sign that presentation is being controlled with presentation elements and attributes (behind the scenes coding) rather than with style sheets (a type of template).
7. The content on many government sites is not written for ease of comprehension. The variety of writing styles used and the lack of a consistent presentation further impedes access to the information the site contains.

**ACTION:**

**Approved by consensus of the Corporate Internet Steering Committee, Tuesday April 10<sup>th</sup>, 2001.**

*The following action will require an ongoing commitment of time and resources and will require a strong lead by BC Communication Division and Ministry Communication Directors. Also, the work of ensuring compliance is an ongoing issue, which will require support and leadership from the Information Science and Technology Agency.*

**Direct the Web Manager's Working Group to evaluate and revise the B.C. Government Internet Standards to be in alignment with the W3C Web Content Accessibility Guidelines [complying with Priority 1 and considering Priority 2 checkpoints] so as to better address issues and mitigate barriers on government websites.**

**Ensure compliance to the Standards through ISTA's Information Resource Management Planning process (IRMP) and through an audit process, to be undertaken by Ministry Communications Branches on a regular basis at the direction of BCCD and BCIS.**

Examples of the kinds of rewrites necessary – as identified through a sample audit of a representative sample of current sites – include:

1. Rewrite Point 6 of the Standards to **require** the use of equivalent alternatives for auditory and visual content.
2. Rewrite Point 22 of the Standards to **require** the use of device-independent event handlers. (For example, when a user interface control can be activated by a *mouse click* it must also be activated by a keyboard event such as pressing the *Enter* key.)
3. Rewrite Point 26 (third bullet) of the Standards to **remove** the stipulation, "...if required by the ministry for their intended audience", in accordance with Point 16 that "...all Internet pages shall be accessible to the general public".
4. Rewrite Point 28 of the Standards to **require** the use of text links that duplicate all hot-spots.
5. Add a new Point to the Standards that encourages the use of plain language, particularly when expressing complex or technical ideas.

Pros:

- The Web Manager's Working Group is already established and are well positioned to interpret and include the WAI's priorities into the BC Government Internet standards.
- The Web Manager's Working Group can incorporate this project into their workload and can revise the Standards within a reasonable (6 month) timeline.

Cons:

- BC Government Standards will need to be evaluated and updated regularly to be sure they keep pace with changes to the WAI Guidelines.

**Proposed Activity Roll Out**

<b>ACTION</b>	<b>LED BY</b>	<b>ESTIMATED DUE DATE</b>
Decision to implement recommendation	Internet Corporate Steering Committee	Spring 2001
Revise and Rewrite current Internet Standards	<ul style="list-style-type: none"><li>• Web Manager's Working Group/Internet Standards Committee</li></ul>	Summer/Fall 2001
Approve revised Standards	<ul style="list-style-type: none"><li>• Web Manager's Working Group/Internet Standards Committee</li><li>• BCCD</li><li>• Ministry Communication Directors</li></ul>	Fall 2001
Begin process to redesign current web sites to comply with new standards	<ul style="list-style-type: none"><li>• BC Information Services</li><li>• Ministry Communication Branches</li></ul>	Fall/Winter 2001
Implement Process to audit sites and measure for compliance	<ul style="list-style-type: none"><li>• BCIS</li><li>• ISTA</li></ul>	Ongoing

## **APPENDIX A: Web Accessibility Audit**

### **Procedure and Methodology:**

Several BC Government web pages were audited – to identify barriers facing people with disabilities – according to the Web Accessibility Initiative's Web Content Accessibility Guidelines 1.0 (<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505/>). Please note: reference to "checkpoint" and "priority" numbers, are references to WAI's checkpoints and priorities.

A six-step procedure was used to evaluate each page:

- assessed by Bobby (<http://www.cast.org/bobby>)
- assessed by Wave ([http://www.temple.edu/inst\\_disabilities/piat/wave/](http://www.temple.edu/inst_disabilities/piat/wave/))
- viewed in a Lynx simulator (<http://www.delorie.com/web/lynxview.html>)
- viewed in Opera 4.02
- viewed in Netscape 4.73
- manually checked the page and source code

The Main Page (<http://www.gov.bc.ca>) was evaluated extensively. Only "new errors" on subsequent pages were noted.

### **1. Main page**

**URL:** <http://www.gov.bc.ca/>

- Hyperlinks      Refer to Checkpoint 13.1. [Priority 2]

- Make hypertext links Informative when read out of context -- either on its own or as part of a sequence of links. For example, rather than using the word "more", as the link text in the "Latest News" summaries, use full descriptions like "more about the Grizzly moratorium" or "full text of this news release". Link text should also be terse.

- Avoid the "click here" syndrome, as clicking refers to using the mouse, which is not possible by everyone.

- Do not use the same link phrase to describe links that point to different URLs. All link text should point to the same resource. When the same link phrase re-occurs, there is an implication that the link points to the same place. If they do not, users may be surprised and disoriented. Such consistency will help page design as well as accessibility.

- In cases where there are several text links on a page – each linking to different resources – they should be distinguished by unique descriptions. (i.e., by specifying a different value for the "title" attribute of each element).

- Client-side Image Map Refer to Checkpoint 1.5. [Priority 3]

- The two client-side image maps, i.e., the top and bottom banner, contain links not presented elsewhere on the page. To improve accessibility, provide redundant text links to "Government of British Columbia", "Top", "Privacy", "Disclaimer" and "Feedback" elsewhere on the page.

Rationale: Some Web browsers when used with a screen reader or when used with image loading turned off, have no way of accessing the hot-spots in a client-side image map. If the links at these hot-spots have no corresponding link in the body of the web page then whole portions of a web site can become unreachable.

- Also, the ALT tags, "top banner" and "footer banner", are meaningless to individuals using screen readers. Use the empty ALT tag, i.e. ALT=" ".

- Tables Refer to Checkpoint 5.5. [Priority 3]

- Although it is recommend that tables not be used for layout, this is not always practical. Tables can be used if they are understandable when linearized or 'unstacked'.

"A linearized table is "a table rendering process where the contents of the cells become a series of paragraphs (e.g., down the page) one after another. The paragraphs will occur in the same order as the cells are defined in the document source. Cells should make sense when read in order and should include structural elements (that create paragraphs, headers, lists, etc.) so the page makes sense after linearization."  
(<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505/wai-pageauth.html#linearized-table>)

- If you choose to use table, it is important to provide a summary description of the table. For example, on the Gov't Main Page, the summary could state: "This page consists of a main page banner and navigation bar, five columns – two for spacing, one for popular topics, one for main content, one for feature – and a bottom navigation bar."

- Provide a briefer summary for each nested table within this main table, as the summary attribute already provides the table's purpose and structure to non-visual media such as screen readers and Braille displays.

- Navigation Mechanisms      Refer to Checkpoint 13.3. [Priority 2]

- Provide a site map or table of contents to assist users in finding what they are looking for. This creates an opportunity to describe the site layout and highlight and explain available accessibility features.
- Use hypertext links placed at the top of the page to enable users to 'skip around'. i.e. "skip to main content" or "skip navigational links". This navigation mechanism benefits people using screen readers and people using the keyboard to tab through the links, by skipping the navigation bar links and the left sidebar on each page and going directly to the main content.

- Sizing      Refer to Checkpoint 3.4. [Priority 2]

- Use relative sizing and positioning rather than absolute units. For example:
  - i) When using the "size" attribute with the FONT tag with the "size" attribute: use "+" or "-", e.g., +1 to make the size one size larger. Do not use fixed sizes such as "1" which may appear unexpectedly small on some configurations. It is recommended that style sheets be used instead of FONT to format text.
  - ii) With tables use percent values for widths and heights. A fixed-size table cell cannot expand if its contents expand, for instance because the user has increased the font size.

Rationale: Users use a wide variety of viewing devices, from very large monitors to the tiny screens on handheld devices, and the content should flow into the appropriate size well. When absolute position and length units are used, this will not happen. Across this range of monitors, users need to be able to change the size of text, to compensate for the resolution or size of their device, or because of a visual impairment. This is not possible if a font is fixed in size.

- Language      Refer to Checkpoint 4.3. [Priority 3]

- While the use the Transitional Standard is required by the BC Government Internet Standards (section 16), the use of HTML 4.0 LANG attribute to specify the language of a document and any changes in language is not being used consistently. Almost every element in HTML 4.0 contains the LANG attribute. Using it helps the computer or assistive technology present information in a way that is appropriate to the language and also helps automatic translation software that translates text from one language into another.



- Acronyms/Abbreviations Refer to Checkpoint 4.2. [Priority 3]

- Use the ABBR and ACRONYM elements to denote and expand any abbreviations and acronyms that are present. For example:

```
<a href="http://142.36.183.50/mlalookup.html">Who is my  
<ACRONYM title="Member of the Legislative  
Assembly">MLA</ACRONYM>?</a>
```

```
<ABBR TITLE="Federal Government">Fed. Gov't</ABBR>
```

- Obviously, it is only necessary to use ABBR and ACRONYM where the abbreviation or acronym first occurs in the document, not for every instance.

- This also applies to shortened phrases used as headings for table row or columns, for example:

```
<TH><ABBR title="Association">Assoc.</ABBR>
```

Rationale: As assistive technology (AT) reads text by "sounding out" words phonetically, which often leads to nonsensical pronunciations of abbreviations and acronyms, these HTML elements instruct AT to make a more meaningful presentation of an abbreviation or acronym. Expanded text can also help all users recall the meaning of acronyms.

- Using Portable Document Files (PDF)

- While the use of HTML format for downloadable documents is required by the Government of B.C. Internet Standards (section 24), in practice the use of PDF is rapidly becoming the more common format. To ensure maximum accessibility to documents, they should be provided in various formats: PDF, HTML, and text.

- When PDF format documents are used, information on how to download the Adobe software should be provided and the following considerations should be factored in:

Portable Document File (PDF) is the accepted standard for electronically distributing documents worldwide. Anyone with Internet access can freely download Adobe Acrobat Reader, the software required for viewing PDF documents, e.g., reports, government forms, job applications, brochures, policy manuals, maps, etc. The documents retain the same fonts, graphics, colours and layouts as when originally created.

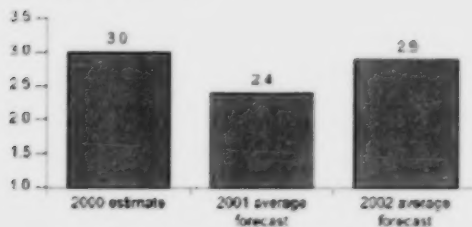
However, for people with some types of disabilities, these documents are not accessible because tables, graphs, pictures and columnar layout can still cause problems.

## Improving Access To Government Web Sites

Access Adobe (<http://access.adobe.com>) is attempting to address this by offering web-based services whereby a PDF file is converted into HTML, which is then generally readable by screen readers. However, PDF documents with tables, graphics, maps are not neatly converted into "readable" HTML.

Here is an example of how much of the information in a document can be lost during the conversion process: when viewing "Third Quarterly Report" ([http://www.fin.gov.bc.ca/qrt-rpt/qr00/Q3\\_00.pdf](http://www.fin.gov.bc.ca/qrt-rpt/qr00/Q3_00.pdf)) in the Adobe Acrobat Reader, the chart on page 5 appears as:

Economic forecast council views on  
British Columbia economic growth  
Percentage change in real GDP



Source: Minister of Finance's economic forecast council, January 11, 2001

When converted by Access Adobe, it is virtually incomprehensible:

Economic forecast council views on  
British Columbia economic growth  
Percentage change in real GDP  
Source: Minister of Finance's economic forecast council, January 11, 2001  
1.0  
1.5  
2.0  
2.5  
3.0  
3.5  
2002 average  
forecast  
2001 average  
forecast  
2000 estimate  
3.0  
2.4  
2.9 5



## **2. News Releases**

**URL:** [http://142.36.183.50/4dclient.acgi\\$nrindex](http://142.36.183.50/4dclient.acgi$nrindex)

- Table Refer to Checkpoint 5.

- The news releases are indexed in a combination of a data table (i.e. Date, Subject, Region) and a layout table— resulting in difficulties for individuals using screen readers. The information is not presented clearly. It is strongly recommended that the information be presented in another format. In general, Use tables for tabular information ("data tables") and avoid using tables to lay out pages ("layout tables").

When linearized, the table appears as:

### **Date Subject Region**

02/26/2001	Minister to promote B.C. forest practices in U.S. west provincewide	
VICTORIA - Forests Minister Gordon Wilson is leading a trade mission to California and Washington state this week to discuss B.C.'s progress in forestry, its leadership in forest protection and Canada...		

02/26/2001	Esketemc community forest agreement signed	Cariboo Forest Region
------------	--	-----------------------

WILLIAMS LAKE - The community forest pilot agreement offered to the Esketemc First Nation has been signed by the band and the Ministry of Forests after 18 months of negotiations, Cariboo South MLA Dav...		
---	--	--

- The News Release Page uses digit format to display dates. This is non-compliant with Government of B.C. Internet Standards - Section 9, which requires that dates be displayed YYYY/MM/DD or Month, DD, YYYY.

- The opening paragraph of the news release often ends abruptly – it occasionally even chops off part of a word. Complete the word, sentence or phrase to avoid confusion.

- Search NewsWire Refer to Checkpoints 12.4 & 10.4 [Priority 2&3]

- Associate labels explicitly with their controls. For example, in HTML use LABEL and its "for" attribute:

```
<LABEL for="keywords">Enter keywords:</LABEL>
```

```
<INPUT type="text" id="keywords" name="Words" SIZE="10"> <BR>
```

and

```
<LABEL for="ministry">Ministry</LABEL>
```

```
<select name="ministry" id="ministry">
```

```
<option default>All Ministries</option>
```

```
<option>Labour</option>
```

```
...
```

```
<option>Green Economy Secretariat</option>
```

```
</select>
```

Rationale: An HTML LABEL specifically associates the label's text with the form control. This allows the browser to tell the user definitively which label applies to the given control. Usually, clicking on the label positions the cursor in the form field, or toggles the value of radio buttons or check boxes. This is intuitive for many users and provides a larger target for the mouse.

- Include default, place-holding characters in edit boxes and text areas (use TEXTAREA), until such time that user agents handle empty controls correctly.

- Place [MM/DD/YY] before the textboxes so that individuals using screen readers will hear the required format prior to entering the date.

### 3. Search

URL: <http://datafind.gov.bc.ca/>

- Image Maps

- Increase the accessibility level of this page by implementing the changes to the header and footer image maps (top & bottom banners), as previously discussed.

- Colour Contrast Refer to Checkpoint 2.2 [Priority 2]

- Maximize the contrast between text and background colours to increase readability when viewed by individuals with colour blindness or when viewed on black and white screens. The dark blue hyperlink text "BC Connects" on the pale blue background may be difficult for some individuals to read. Refer to the approved colour palette at <http://www.ista.gov.bc.ca/IM-IT/styl/fcs/colour.htm>.

#### **4. Government Directory**

**URL:** <http://www.dir.gov.bc.ca/>

- Colour Contrast                      Refer to Checkpoint 2.2 [Priority 2]

- Maximize the contrast between text and background colours. Again, the dark blue text on the pale blue background is difficult to read. Refer to the approved colour palette at <http://www.ista.gov.bc.ca/IM-IT/styl/fcs/colour.htm>.

- Consistency

- To maintain a common look and feel among Ministry sites, considering using one of the Typical Screens (<http://www.ista.gov.bc.ca/IM-IT/styl/scrn/default.htm>).

#### **5. Television ads**

**URL:** <http://www.gov.bc.ca/communications/media/>

- General Design

- Implement previously discussed recommendations related to template design

- Equivalent Information                      Refer to checkpoint 1.1 & 1.3 [Priority 1 & 2]

- Provide synchronized captioning or text transcriptions for video files for the benefit of individuals with hearing impairments, those viewing in noisy environments, and those having difficulty understanding the spoken language.

- Provide an auditory description of important visual information. These descriptions are required by people who are blind so they can follow the action and other non-auditory information in video. Visual action such as body language or other visual cues may not be accompanied by enough audio information to convey the same information. Unless verbal descriptions of this visual information are provided, people who cannot see (or look at) the visual content will not be able to perceive it.

- Layout

- Place a link near the top of the page to the viewing instructions located at the bottom of the page. Users will not know instructions are there without scrolling down.

## **6. Feedback**

**URL:** <http://www.gov.bc.ca/fin/prgs/bcis/feed/>

- General Design

As discussed previously regarding forms:

- Include default, place-holding characters in edit boxes and text areas.
- Explicitly associate form controls and their labels with the LABEL element.

- Obsolete Language      Refer to Checkpoint 11.2. [Priority 2]

- Avoid use of obsolete or deprecated language features, if possible. For example, use style sheets for formatting, rather than the deprecated elements BASEFONT, CENTER, FONT.

Rationale: Deprecated or obsolete language features are those which, though currently in common use, have been removed from the HTML specification and are not expected to be supported in future browsers. Often these features have been removed because of compatibility issues and replaced with elements that are more compatible with a wide range of browsers and assistive technology. It is good practice to use the newer alternatives whenever possible.

## **7. BC Connects**

**URL:** [http://www.bcconnects.gov.bc.ca/popt/citizen\\_events.htm](http://www.bcconnects.gov.bc.ca/popt/citizen_events.htm)

- General Design

- Overall, this page is fairly accessible. Implementing the changes as discussed for the Main Page would increase the level of accessibility.
- Suggested minor changes to two ALT tags are:
  - i) change **alt="BC Connects - Services - Main Banner"** to **alt="BC Connects - Services"**.
  - ii) change **alt="bottom\_citizen"** to **alt=""**, as the image is purely decorative.

- Readability      Refer to checkpoint 2.2. [Priority 3]

- Maximize the contrast between text and background colours. Also, use a clear, crisp font to maximize readability.

## **8. Job Postings**

**URL:** <http://www.postings.gov.bc.ca/>

- Alternative Text

- As discussed previously, provide alternative text for all images, including the site meter. Ensure the ALT tags convey the same function or purpose as the image. For example, rather than **ALT="POSTINGS"** use **ALT="Postings: Government of British Columbia Job Opportunities"**. This is more informative and will assist in orienting individuals using screen readers.

- Structure versus Presentation Refer to Checkpoint 3.2 & 3.3, 3.5 [Priority 2]

- Mark up documents with the proper structural elements. Control presentation with style sheets rather than with presentation elements and attributes.

- Don't misuse markup for a presentation effect (e.g., using a table for layout or a header to change the font size). It makes it difficult for users with assistive technology to understand the organization of the page or to navigate through it.

- Create documents that validate to published formal grammars. Include a document type declaration at the beginning of the page that refers to a published DTD. Identify the language of the text, i.e. **<HTML lang="en">**

- Use style sheets to control layout and presentation. Use the CSS 'font' property instead of the HTML FONT element to control font styles.

- Use header elements to convey document structure and use them according to specification. Do not use headers for font effects.

**QUICKTEST** To determine if content is structural or presentational, create an outline of the document. Each point in the hierarchy denotes a structural change. Use structural markup to mark these changes and presentational markup to make them more apparent visually and aurally.

## **9. Key Facts and BC Benefits Caseload Statistics, BC Ministry of Social Development and Economic Security**

**URL:** <http://www.sdes.gov.bc.ca/research/keyfacts.htm>

- Tables

Refer to Checkpoint 5.1

- Use table headers to label rows or columns of data. Identify table headers by using the TH (table header) element instead of the TD (table cell) element.

Rationale: This is important to the computer's ability to speak the contents of a table using a screen reader synthesizer. Browsers and assistive technologies rely on structural markup such as headers to customize presentation to meet a user's needs.

- Hyperlink Text

- When two or more links refer to different targets but share the same link text, distinguish the links by specifying a different value for the "title" attribute of each A element. For example:

`<a href="..graphs/db.pdf" title="disability benefits">graph</a>`

- Acronyms

- Mark up abbreviations and acronyms with ABBR and ACRONYM and use "title" to indicate the expansion. This also applies to shortened phrases used as headings for table row or columns. If a heading is already abbreviated provide the expansion in ABBR. If a heading is long, provide an abbreviation.

- Consistency

- To maintain a common look and feel among Ministry sites, use one of the Typical Screens (<http://www.ista.gov.bc.ca/IM-IT/styl/scrn/default.htm>).

## **10. MSDES Disability Program**

**URL:** <http://www.sdes.gov.bc.ca/programs/disablty.htm>

NOTE: Other than the errors discussed regarding the Main Page, this page contain no new errors in relation to accessibility.

- General Design

- Replace `alt="Disability Programs Banner Head"` with `alt="Disability Programs – Ministry of Social Development and Economic Security"` to accurately reflect information presented in the image and to assist individuals using screen readers with navigation and orientation.

## **11.Ministry of Health, Health Action Guide**

**URL: <http://www.bchealthaction.org/>**

- General Design

- As previously discussed, do not use the same link phrase to describe links that point to different URLs.

- Alternative Text

- Providing alternative text for all images would significantly increase the accessibility level of the page.

- Rather than **ALT="blank space for alignment"**, simply use **ALT=" "**

- When multiple images are placed next to each other without any space in between (e.g., in the footer), there is no space between each image's ALT text, causing the words to run together and to be highly confusing, i.e.,

[Go to Top](#)[Go to Copyright](#)[Go to Disclaimer](#)[Go to Privacy Statement](#)[Go to Feedback Form](#)

- Place some sort of separating character between adjacent links, for example:

```
<A HREF="#top"><IMG SRC="/images/footersubtop.gif" BORDER="0"
ALT="[Go to Top]"></A><A
HREF="http://www.gov.bc.ca/com/copy/"><IMG
SRC="/images/footercopyright.gif" BORDER="0" ALT="[Go to
Copyright]">
```

- BLOCKQUOTE                      Refer to Checkpoint 3.7. [Priority 2]

- Use BLOCKQUOTE only for quotations, not indentation. BLOCKQUOTE adds semantic information to the page that helps users with assistive technology to understand the organization of the page. When this is used for a presentation effect (to achieve an indent) on non-quoted text, it may be difficult for some users to understand the page.



## **12. Tax info**

**URL:** <http://www.fin.gov.bc.ca/itb/>

NOTE: Other than the errors discussed regarding the Main Page, this page contain no new errors in relation to accessibility. However, adding alternative text would increase accessibility immensely.

- Maintaining a common look and feel also helps aids accessibility and usability – Closer adherence to the Typical Screen (<http://www.ista.gov.bc.ca/IM-IT/styl/scrn/default.htm>), as required by the Government of B.C. Internet Standards is recommended.

## **13. Small Business One-Stop Site**

**URL:** <http://www.tbc.gov.bc.ca/gasbc/osbr/index.html>

- General Design

- Increase the accessibility level significantly by following the HTML 4.0 specifications, including:

- i) Provide alternative text for all images.
- ii) Make hypertext links Informative when read out of context.
- iii) Avoid the "click here" syndrome.
- iv) Provide redundant text links for hotspots on image maps.
- v) Identify the language of the text.
- vi) Include a document type declaration at the beginning of the page.

## **14. Campground Reservations**

**URL:** <http://www.discovercamping.ca/>

- General Design

- Page contains several of the errors previously discussed. Correct them by:

- i) Providing alternative text for all images.
- ii) Providing redundant text links for hotspots on image maps.
- iii) Associating labels explicitly with their controls.
- iv) Providing place-holding characters in edit boxes and text area, for example, use TEXTAREA.

- The images for "Choose Site" and "When to camp" are reversed. Intuitively, the map means "Choose Site" and the calendar indicates "When to camp". This may confuse some users.



- Place the titles **User id** and **Password** beside the appropriate textboxes, so read in a logical order when linearized.
  - Alternatively, create a logical tab order through links, form controls, and objects via the "tabindex" attribute to ensure a logical page design. Refer to Checkpoint 9.4
  - Remove "Best viewed with Netscape Navigator 4.0 and higher or Microsoft IE 4.0 and higher." Requiring newer browsers limits individuals using older software and hardware.
- \*(Incidentally, this page was more accessible and had a cleaner, simpler look prior to the March 1, 2001 update.)

## **APPENDIX B: Resources**

The following are resources being used within the design industry to guide the creation of accessible websites.

### **Guidelines**

Architectural and Transportation Barriers Compliance Board. "Electronic and Information Technology Accessibility Standards." December 2000. <a href="http://www.access-board.gov/sec508/508standards.htm">http://www.access-board.gov/sec508/508standards.htm</a>	More commonly referred to as Section 508, these standards require that when (American) Federal agencies develop, procure, maintain, or use electronic and information technology, it must be accessible to individuals with disabilities.
IBM Corporation. "IBM Web Accessibility Checklist." Version 3.0, January 2001. <a href="http://www-3.ibm.com/able/accessweb.html">http://www-3.ibm.com/able/accessweb.html</a>	
Microsoft Corporation. "Accessible Web Design Guidelines." January 2001. <a href="http://www.microsoft.com/enable/dev/web/default.htm">http://www.microsoft.com/enable/dev/web/default.htm</a>	A wealth of information that explains to Web site managers and developers the importance of accessible Web sites and provides resources including guidelines, tools, a checklist, and examples of accessible sites.
Portuguese Accessibility Special Interest Group (PASIG). "PASIG Internet Accessibility Guidelines – Final Version." 1998. <a href="http://www.acessibilidade.net/doc/acessibilidade/guidelines_draft2.html">http://www.acessibilidade.net/doc/acessibilidade/guidelines_draft2.html</a>	Guidelines applied to online information published by the Portuguese government and public services. Also used by Portuguese companies, organizations, and individual users.
World Wide Web Consortium. "W3C User Agent Guidelines 1.0" October 2000. <a href="http://www.w3.org/TR/UAAG10/">http://www.w3.org/TR/UAAG10/</a>	Guidelines for designing <i>user agents</i> that lower barriers to Web accessibility for people with disabilities. User agents include HTML browsers and other software that retrieves and renders <i>Web content</i> .
World Wide Web Consortium. "Web Content Accessibility Guidelines 1.0." May 1999. <a href="http://www.w3.org/TR/WAI-WEBCONTENT/">http://www.w3.org/TR/WAI-WEBCONTENT/</a>	

### **How-To**

Microsoft Corporation. "DHMTL Accessibility." <a href="http://msdn.microsoft.com/workshop/author/access/accessibility.asp">http://msdn.microsoft.com/workshop/author/access/accessibility.asp</a>	Explains how to create accessible Web pages using Dynamic HTML (DHTML) with Microsoft® Internet Explorer 4.0 and later.
Odievich, Daniel, Microsoft Corporation. "Making Web Pages More Accessible." November 2000. <a href="http://msdn.microsoft.com/library/default.asp?URL=/library/welcome/dsmsdn/ccssblwebpgs.htm">http://msdn.microsoft.com/library/default.asp?URL=/library/welcome/dsmsdn/ccssblwebpgs.htm</a>	Offers practical tips for making Web pages more accessible, including accommodating users who are unable to use or have difficulty using a mouse.
WebAIM. "Tutorials." <a href="http://webaim.org/tutorials/">http://webaim.org/tutorials/</a>	WebAIM's (Web Accessibility In Mind) online tutorials provide techniques for designing accessible Web pages.
World Wide Web Consortium. "Curriculum on Web Content Accessibility Guidelines 1.0." March 2000. <a href="http://www.w3.org/WAI/wcag-curric/">http://www.w3.org/WAI/wcag-curric/</a>	Extensive online curriculum that explains and gives examples for the Web Content Accessibility Guidelines. Can be used as a self-study material or for presentations to groups.

### **Evaluation Tools**

Center for Applied Special Technology (CAST). "Bobby 3.2." <a href="http://www.cast.org/bobby">http://www.cast.org/bobby</a>	Bobby is a web-based tool that analyzes web pages for their accessibility to people with disabilities.
Public Service Commission of Canada. "Web Page Accessibility Self-Evaluation Test. HTML Version - 2.0." <a href="http://www.psc-cfp.gc.ca/eeppm-pmpee/access/testver1_e.htm">http://www.psc-cfp.gc.ca/eeppm-pmpee/access/testver1_e.htm</a>	A 27-question multiple choice survey that produces 5 accessibility ratings.
Institute on Disabilities, Temple University. "WAVE 2.01." <a href="http://www.temple.edu/inst_disabilities/piat/wave/">http://www.temple.edu/inst_disabilities/piat/wave/</a>	A tool that helps people perform those tasks that require human judgment (e.g. "Does this reading order make sense?").
World Wide Web Consortium. "HTML Validation Service." 2000. <a href="http://validator.w3.org/">http://validator.w3.org/</a>	Checks HTML documents for conformance to W3C HTML and XHTML Recommendations and other HTML standards.

### **References**

Paciello, Michael G. Web Accessibility for People with Disabilities. CMP Books, 2000.

